MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

EBM 7010 – Prototyping and Product Life-cycle Management

(All Sections / Groups)

8 MARCH 2018

4.00 p.m - 6.00 p.m
(2 Hours)

INSTRUCTION TO STUDENT

1. This question paper consists of 3 pages only (including this page).

2. Attempt ALL **FOUR** questions. All questions carry equal marks (25 marks) and the distribution of the marks for each question is given.

3. Please print all your answers in the Answer Booklet provided.

Question 1

a) Use a diagram to explain the details of a typical product life cycle, and give example on how the Product Life Cycle Management (PLM) is important in each phase.
[12 marks]

b) As a product manager of mobile apps, you are tasked to perform a strategic review of product life-cycle, it can be the internal or external factors of a given product lifecycle.
[13 marks]

Question 2

(a) A bicycle manufacturing company would like to introduce the product lifecycle management system. As the product engineer, kindly advise the methodology from design and manufacturing structures.
[16 marks]

(b) An integrated product lifecycle management system allows individual engineering and production data to be used at various decision making levels. With an aid of a diagram, perform the SWOT analysis of using integrated system in the company.
[9 marks]

Continued...

Question 3

(a) Define Design for Six Sigma (DFSS), Define Measure Analyse Improvement Control (DMAIC), and Define Measure Analyse Design Verify (DMADV). How is each product development system should be used?

[8 marks]

(b) With the aid of a table, list down the components of DMAIC and DMADV used in each phase of the product life cycle.

[8 marks]

(c) As a software product owner, you are requested to perform DMADV over a new release of software in share riding system (similar to UBER). Suggest a framework for this application.

[9 marks]

Question 4

As a product manager, you are required to look into the product variance of a 3D printed model.

(a) List down the parameters and relevant variables that will affect the Part Variation (PV) and R&R of your 3D printed model. Proposal a model to define the expanded uncertainty.

[6 marks]

(b) Identify the most significant factor on both cases. Discuss in detail, the systematic approach to enhance the system uncertainty.

[6 marks]

(c) Using your own word, explain the impact of the uncertainties due to the measurement over the product liftcycle management of a precision part (up to 100 um precision requirements).

[7 marks]

(d) Discuss on its dependancy and correlation among the parameters. What if there are more than 2 parameters closely correlated to each others.

[6 marks]

End of Paper.